CALIFORNIA
High-Speed Rail Authority

October 13, 2011

Honorable Mark Leno, Chair
Joint Legislative Budget Committee
Senate Budget & Fiscal Review Committee

Honorable Bob Blumenfield, Chair
Assembly Budget Committee

Honorable Christine Kehoe, Chair
Appropriations Committee

Honorable Felipe Fuentes, Chair Senate
Assembly Appropriations Committee

Re: AB 115 Report: Formal Response & full analysis of the April 18, 2011, joint statement on California High-Speed Rail by congressional and state officials.

Pursuant to the requirements of AB115 (Committee on Budget) Ch. 38 (statutes of 2011), Section 8(d) the California High-Speed Rail Authority respectfully submits this attached report.

Sincerely,

Roelof van Ark

Cc:

- Honorable Bob Huff, Vice Chair, Senate Budget and Fiscal Review Committee
- Honorable Jim Nielsen, Vice Chair, Assembly Budget Committee
- Honorable Joe Simitian, Chair, Senate Budget and Fiscal Review Subcommittee No.2
- Honorable Gilbert Cedillo, Chair, Assembly Budget Subcommittee No. 5
- Mr. Mac Taylor, Legislative Analyst
- Ms. Keely Bosler, Staff Director, Senate Budget and Fiscal Review Committee
- Mr. Bob Franzoia, Staff Director, Senate Appropriations Committee
- Mr. Seren Taylor, Staff Director, Senate Republican Fiscal Office
- Mr. Craig Cornett, Senate President pro Tempore's Office
- Mr. Christian Griffith, Chief Consultant, Assembly Budget Committee
- Mr. Geoff Long, Chief Consultant, Assembly Appropriations Committee
- Mr. Eric Swanson, Staff Director, Assembly Republican Fiscal Committee
- Ms. Deborah Gonzalez, Policy & Fiscal Director, Assembly Republican Leader's
- Mr. Christopher W. Woods, Assembly Speaker's Office
- Mr. Brian Kelly, Policy Director, Senate Pro Tem Darrell Steinberg
- Mr. Josh Tooker, Legislative director, Senator Alan Lowenthal
- Ms. Julie Sauls, Chief of Staff, Senator Jean Fuller

- Ms. Kristen Stauffacher, Legislative Director, Senator Joe Simitian
- Ms. Carrie Cornwell, Chief Consultant, Senate Transportation & Housing Committee
- Mr. Art Bauer, Consultant, Senate Transportation & Housing Committee
- Mr. Bob Hartnagel, Chief of Staff, Senator Mark Leno
- Mr. Barry Steinhart, Senior Legislative Aide, Senator Mark Leno
- Ms. Laura Ortega, Chief of Staff, Senator Tom Berryhill
- Mr. Brent Finkel, Legislative Director, Senator Tom Berryhill
- Mr. Martin Radosevich, Legislative Director, Senator Michael Rubio
- Ms. Kelly Garman, Legislative Director, Senator Bob Huff
- Ms. Erica Martinez, Transportation Policy Consultant, Speaker John Perez
- Ms. Janet Dawson, Chief Consultant, Assembly Transportation Committee
- Mr. Lucas Frerichs, Legislative Director, Assembly Member Rich Gordon
- Mr. Dillon Gibbons, Chief of Staff, Assembly Member Connie Conway
- Mr. Leigh Carter, Legislative Director, Assembly Member. Connie Conway
- Mr. Will Shuck, Chief of Staff, Assembly Member, Bonnie Lowenthal
- Ms. Allison Ruff, Legislative Director, Assembly Member Bonnie Lowenthal
- Mr. Christian Griffith, Chief Consultant (Transportation), Assembly Budget Committee
- Mr. David Stammerjohan, Legislative Director, Assembly Member, Mike Feuer
- Mr. Les Spahn, Consultant, Assembly Member, Mike Feuer
- Ms. Victoria Grajack, Legislative Director, Assembly Member, Cathleen Galgiani
- Mr. Nick Hardeman, Chief of Staff, Assembly Member, Fiona Ma
- Ms. Elizabeth Watson, Legislative Director, Assembly Member, David Valadeo
- Ms. Colleen Beamish, Chief of Staff, Assembly Member, Robert Blumenfield

California High-Speed Rail Authority

Report in Response to AB 115, Chapter 38 of the Statutes of 2011

October 14, 2011

** Submitted pursuant to Section 8 of Chapter 38 of the Statutes of 2011*

Response to Part (d)

(d) A formal response and full analysis of the April 18, 2011, joint statement on California high-speed rail by congressional and state officials. (Joint Statement referred to is that issued by Congresswoman Eshoo, Senator Simitian, and Assembly Member Gordon relating to a "Blended System" implementation for High Speed Rail on the Peninsula.

1. Introduction

Consistent with Bill AB115 section 38 subpart (d) the following report represents a formal response and full analysis of the April 18, 2011, joint statement on California high-speed rail by congressional and state officials.

On April 18th, 2011, Congresswoman Eshoo, State Senator Simitian and State Assembly Member Gordon released a statement on "High Speed Rail" (1). The Authority has long seen Caltrain and the cities on the Peninsula as valuable partners in defining the vision for the Caltrain corridor. The Authority strongly agrees with the statement by Congresswoman Eshoo, State Senator Simitian and State Assembly Member Gordon that a statewide high-speed train system should: "…makes prudent use of limited public funds and which is responsive to legitimate concerns about the impact of high-speed rail on our cities, towns, neighborhoods and towns."

In addition to defining broad goals for the statewide HST system, the statement offered observations about the Authority and its performance as a state agency, and also provided specific recommendations regarding the design and operation of the high speed train system on the Caltrain corridor between San Francisco and San Jose (SF to SJ).

The Legislator's statement specifically attempted to describe what "high-speed rail done right" would look like on the Caltrain corridor. Their statement recommended the following:

- **Aerial Options:** "We explicitly reject the notion of high-speed rail running from San Jose to San Francisco on an elevated structure or "viaduct"; and we call on the High-Speed Rail Authority to eliminate further consideration of an aerial option;"
- **Right of Way:** "We fully expect that high-speed rail running from San Jose to San Francisco can and should remain within the existing CalTrain right of way."
- **Blended Service:** "Within the existing right-of-way, at or below grade, a single blended system could allow high-speed rail arriving in San Jose to continue north in a seamless fashion as part of a 21st Century CalTrain (using some combination of electrification, positive train control, new rolling stock and/or other appropriate upgrades) while maintaining the currently projected speeds and travel time for high-speed rail."
- **EIR Analysis:** "…consistent with a project of this more limited scope, the Authority should abandon its preparation of an EIR (Environmental Impact Report) for a phased project of larger dimensions over a 25 year timeframe. Continuing to plan for a project of this scope in the face of limited funding and growing community resistance is a fool's errand; and is particularly ill-advised when predicated on ridership projections that are less than credible."

As a result of the April 18th statement, the High Speed Rail Authority Board at their May 4th, 2011 meeting directed their CEO to "slow down" work on the SF to SJ section pending clarification and

resolution of the above mentioned issues. Since that board meeting, the Authority and Caltrain have worked together to further understand the implications of the April 18th statement for both agencies. More recently the Bay Area Council has requested the Metropolitan Transportation Commission [MTC] to play a stronger role in coordinating a single high-speed rail project vision for the Peninsula[(2)]. Subsequently these two organizations have been involved in meetings with Caltrain and the Authority.

Following further clarification discussions with the elected officials who issued the original joint statement, the following discussion outlines the Authority's current progress with the four issues identified above.

- **Aerial Options:** Following the release of the April 18th statement, the Authority immediately requested clarification on several items outlined in the statement. In a letter dated April 25, 2011, to Senator Simitian, the Authority sought clarification on the issue related to the use of aerial structures[(3)].

  In a following statement provided by Senator Simitian's office it was clarified that "aerial design options are not outright rejected but are acceptable if locally supported."

  This is a key clarification. In some cities, such as the southern end of San Mateo and in San Carlos, aerial rail options are consistent with recent city planning efforts and with the design of the Caltrain and high speed train systems. To remove these aerial options from the Authority's on-going environmental process would be inconsistent with local plans and would also make the feasibility of the joint Caltrain and high speed train system technically very difficult.

  If the Authority continues its environmental evaluation of the current design options outlined in its Supplemental Alternatives Analysis Report (SAAR) dated August of 2010, the Authority will continue to study those aerial options as part of the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR). The conditions outlined in the April 18th statement will be duly noted as part of the environmental process moving forward. The Authority's Supplemental Alternatives Analysis Report (SAAR) dated August of 2010, includes three design options, namely those referred to as Alternatives A, B and B1, which include trench solutions in those cities requesting such solutions to be investigated[(4)].

- **Four track sections:** On May 18th, the Authority's CEO Roelof van Ark and Board Member Jim Hartnett met with Senator Simitian and Assemblymember Gordon to discuss several of the issues related to the April 18th statement. Senator Simitian clarified that although reported in some media, the joint statement did not stipulate that the future Caltrain and high-speed rail system should be limited to two tracks, and that as may be necessary, three or four track sections may be planned to ensure adequate service capacity, as long as the other stipulated criteria are met.

- **Right of Way (ROW):** In the same April 25th letter, the Authority requested a clarification from Senator Simitian on the use of ROW outside of the existing Caltrain ROW. On the May 18th meeting Mr. Van Ark shared preliminary drawings of the rail corridor in San Mateo and Santa Clara counties to show how the proposed four-track railroad stayed substantially within the existing Caltrain rail corridor ROW and that "strips" of additional ROW may be needed to accommodate a four-track railroad in certain locations.

As a result of that meeting, Senator Simitian clarified that the legislators were in agreement if the required infrastructure for a "blended" service for both Caltrain and HST would be substantially, but not necessarily completely, within the existing Caltrain ROW. Additionally it was clarified that the ROW constraints were relevant to Santa Clara and San Mateo counties, but not necessarily San Francisco, where it was clear that a deviation from the Caltrain alignment is necessary for the approach to the new Transbay Terminal.

This clarification is helpful in that it is possible that additional property outside of the existing Caltrain ROW may be needed for several technical reasons:

- in some instances strips of property alongside the existing Caltrain alignment would be required to allow for four-track passing sections to ensure that the optimized Caltrain and high-speed rail system can be accommodated,
- the electrification of the rail line and the supply of electricity to that system requires locations for substations outside the existing ROW,
- for stations and supporting infrastructure for Caltrain and HSR some additional real-property may be required,
- for straightening out curves in the existing tracks to allow for higher operating speeds,
- the construction of grade separations may require some real-property outside of the existing Caltrain ROW.
- a storage yard / maintenance facility for HSR trains will most likely be required to operate a HSR service from the end stations.

Design efforts, when resumed, will continue to keep the railroad substantially within the existing Caltrain ROW. Limited additional ROW on either side of the existing corridor may be needed either temporarily during construction or permanently to ensure safe, efficient construction and operation of the shared Caltrain and HST system.

2. Chronology of Events:

a) **Phased System Implementation:** At the February 3rd, 2011 board meeting(5), the Authority announced that it would study the potential for completing the construction of the high-speed train project and operation of high-speed train service in "phases" along the Caltrain corridor between San Francisco and San Jose. The Initial Operating Phase (IOP) would help determine what minimal infrastructure improvements would be needed to accommodate initial high-speed rail and future Caltrain service needs. The April 18th statement echoed many of the same infrastructure and operational ideas outlined in the "phased implementation" strategy suggested by the Authority in February and presented to the Authority Board in May, 2011.

The idea of implementing a high speed train system in phases over an existing railroad is a logical means to initiating HST service in highly urbanized areas with limited room for railroad expansion. As examples, both in France and in South Korea initial HST services were brought into Paris and Seoul respectively, on the existing regional railroad infrastructure. Following this model on the Peninsula would be beneficial to the project, however could result in a longer

term system compromise, unless well planned. Safety, reliability and travel times of the system must at all times be considered and not be compromised. The need for future expansion of the system needs to be considered during the early phases of the project, to prevent the need for frequent re-builds of the system. All longer term needs for all users of the shared system (in the case of the Peninsula this would include Caltrain, High-Speed Rail and the freight operators) need to be considered during early design and construction phases.

b) **Blended System Implementation:** The "blended system" introduced by the elected officials on April 18th, 2011 offers much commonality with the "phased approach" and, if implemented correctly, would make prudent use of limited public funds and result in a shared track solution for Caltrain, High-Speed Rail and freight operators on the Peninsula. The "blended system" is different from the full build project referenced in the "Phased System Implementation." The full-build project requires four-tracking the entire Caltrain Corridor to support Caltrain and high speed rail services. The blended system is a smaller scaled project that supports a lower level of service for both Caltrain and high speed rail on the existing infrastructure, which is primarily a two-track system with limited three and four-track sections. The Authority is awaiting a reading from the Attorney General [AG] as to if such a scaled back system would be acceptable from both CEQA and Proposition 1A perspectives. See "Letter to the Attorney General's Office" below.

3. Throughput Capacity Simulations:

To ensure that the "blended system" would be operationally feasible Caltrain commissioned a "Capacity Study." It was imperative to determine the throughput capacity of the existing rail infrastructure on the Peninsula, particularly considering the much differing operational criteria (speeds, stopping patterns, train lengths etc.) of the two passenger rail services. In June of 2011, Caltrain initiated this capacity assessment to determine what Caltrain and high-speed service levels can be accommodated in the existing Caltrain right-of-way, assuming Communications Based Overlay Signal System Positive Train Control (CBOSSPTC) and corridor electrification are in place. This operations simulation work is considered a "due diligence" exercise by Caltrain to ensure both Caltrain and HST operational needs will be met into the foreseeable future.

Caltrain's operation simulation model [(6)] (developed and conducted by LTK Engineering Services) assumes that Caltrain will need to serve six trains "per hour per direction" (phpd).

<u>The "Baseline" simulation analysis:</u> This initial analysis was undertaken to determine what number of high-speed trains could be accommodated, in addition to the six Caltrain trains, on an electrified Caltrain corridor with the <u>existing</u> tracks and infrastructure. However to accommodate a high-speed rail operation on the same tracks, Caltrain had to assume a certain amount of new infrastructure as the high-speed train sets would require longer and dedicated platforms at San Jose, Millbrae and 4th & King (San Francisco) stations. Therefore in addition to the existing Caltrain infrastructure, the initial model also included the following (see slides 11 and 12 in attached LTK presentation):

- Improvements to the 4th & King Station (Transbay overflow platforms) to allow the 1400' HST platforms to be accommodated at that station.

- Additional tracks and HST platforms at Millbrae to allow HST passengers to transfer to BART and the SFO airport.

- Additional aerial structure and tracks to allow the high speed trains to transition from the existing at-grade Caltrain corridor at Lawrence to the upper-level four track high speed train station at Diridon station in San Jose.

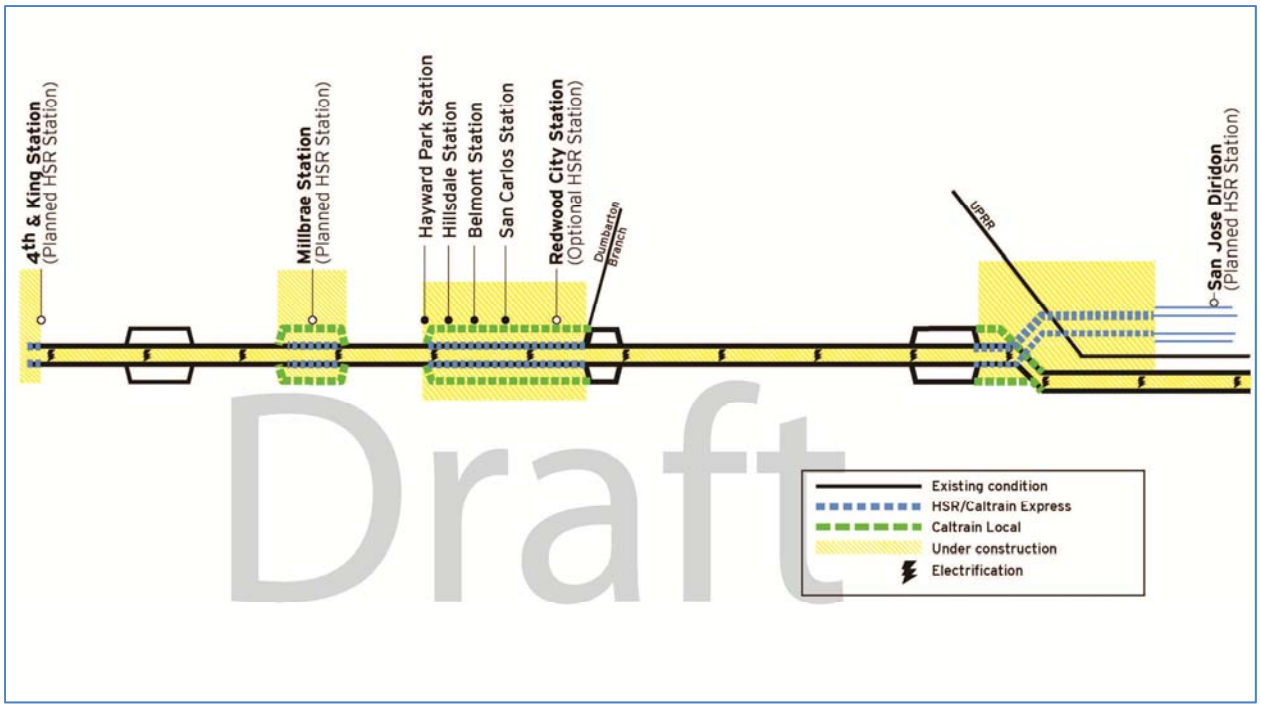
The outcome of the initial simulation analysis, based on the existing Caltrain track infrastructure concluded that, in addition to the six Caltrain trains, only two high-speed rail trains could be operated phpd at peak times. This capacity will not suffice to successfully initiate a high-speed rail service up to San Francisco as it will neither offer the required performance level expected of high-speed rail, nor the passenger capacity required to accommodate the expected passenger demand.

"Baseline including 4-Track Overtake Locations" simulations: In addition to the original concept of just electrifying the Caltrain corridor and implementing CBOSSPTC, Caltrain also investigated potential areas where additional passing tracks may be needed to accommodate more Caltrain and high-speed trains, with the aim to ensure an acceptable minimum level of service for high-speed rail operations. Three different locations for eight-mile, four-track sections are being investigated, where high speed trains could pass Caltrain trains in stations or "overtakes" (see slides 18 and 19, in attached LTK presentation)

- A north overtake in the Bayshore to Millbrae,
- A mid-line overtake between Hayward Park and San Carlos / Redwood City, and
- A southern overtake between San Antonio and Lawrence.

To date, the north and mid-line overtake sections have been analyzed. After examining the relative operational and constructability merits of the different solutions, the mid-line overtake from Hayward Park to Redwood City showed the greatest promise in that it had the highest potential operational benefit because it allowed the HST to more quickly bypass the (five) Caltrain stations and Caltrain to more frequently service its higher ridership stations. It also utilizes the existing four track section at Redwood Junction (See Figure 1 below). Caltrain will be testing the southern overtake section and a 3 track section (length to be determined) to fully explore all overtake options along the corridor.

Figure 1: Possible Blended System for Peninsula



Since June, Caltrain has made significant progress in determining what capacity could be realized on the Caltrain corridor. The HST service would require at least four trains per hour per direction to serve the estimated passenger demand to and from the Peninsula and San Francisco. The Phase 1 service plan used for the Project-level SF to SJ EIR stated that eight high-speed trains phpd would be required for a fully built out Phase 1 during peak periods. Consequently, Caltrain has focused its operations simulation efforts on studying scenarios with six Caltrain trains and four high-speed trains phpd which will offer the required performance level expected of high-speed rail and the passenger capacity expected during this initial phase. While the initial model results show promise that such an operation is possible, as discussed above there are compromises that will need to be made by the Authority in order for the blended approach to work. Specifically the Authority will need to accept:

- That the high speed trains will not operate at 125 mph as originally envisioned for the SF to SJ corridor and consequently not be able to make the 30 minute travel time goal between SF and SJ as stated in Proposition 1A. It is not yet clear whether high-speed trains will need to operate at 79 mph or possibly may be able to reach speeds of up to 110 mph on the Caltrain corridor. Further investigation continues.
- That the high-speed trains will operate on a railroad with "at-grade" crossings. The original performance criteria for the statewide system required a "fully grade-separated" system. If the high-speed trains are to operate on the current Caltrain tracks without grade separations, the Authority will have to study the potential reliability issues when operating within an "open" environment such as the existing Caltrain corridor today (there are over 40 at-grade crossings between SF and SJ today). Additional measures to ensure the safety and reliability of the system may be necessary. Caltrain with Authority input, will be conducting an at-grade crossing study to

determine if and where grade separations will be needed to support the "blended system." Approvals by the PUC would be required.

- A blended solution will require careful and robust operations planning between the two railroads. With two railroads operating on a shared track system, there is the potential for one service performance affecting the other. The success of high-speed rail is very dependent on punctual and reliable service, thus aspects of reliability and punctuality will need to be agreed upon between operators for a blended operation to be successful. If a high speed rail service provider cannot guarantee on-time performance the competitive edge over the automobile or commercial air service is lost (e.g. in Spain if a train is more than five minutes late, the rail company refunds the passenger the full ticket price). Thus as Caltrain's operation modeling continues, the Authority will continue to "stress test" the model to incorporate all possible normal operational and fault modes on the corridor. For example, the following scenarios need further investigation:
    - What if a high speed train traveling north to San Francisco arrives five minutes late at San Jose? Can the SF to SJ section still deliver that train to SF without further delay?
    - What if a Caltrain train has a five minute delay (e.g. a large number of bicycles are brought onto a Caltrain train) somewhere on the Peninsula? Will that affect the HST on-time performance?
    - What if both of the above events happen simultaneously and what operational solutions exist?
- The Authority believes that a blended system capable of robustly supporting up to four high-speed trains to operate phpd will meet its immediate needs. The Authority needs to consider technical aspects to be able to expand its infrastructure to accommodate additional demand to a primary market like San Francisco in the longer term, as this is important to attract private operating concessionaires. The ability to add additional track or grade separations once Caltrain and HSR service is operating is more challenging and would best require early consideration. This however does not deter from the attraction of the "blended system" implementation.

4. Capital Costs of a Blended Solution

As is evident from this report, further analysis of the options is ongoing to ultimately define the blended system. Caltrain and the Authority will continue working with its stakeholders on evaluating the various design options until the ultimate solution is established.

An estimate of the capital cost of providing the necessary infrastructure for a blended solution indicates that it remains substantial. Initial estimates based on the existing engineering work by the Authority puts the total at approximately $5.3 billion (2010 dollars) for the mid-line overtake solution. In addition to the station and other infrastructure improvements described above as part of the "Baseline including 4-Track Overtake Locations" simulation work there would also be roadway improvements provided as part of the project. Those projects would include:

- Millbrae (two grade separations)
    - Center St.
    - Santa Paula Pedestrian Crossing
- San Mateo (three grade separations)
    - 25th Ave.

        - 28th Ave. is extended under the railroad. It currently terminates on the west side of the railroad.
        - 31st Ave. is extended under the railroad. It currently terminates on the west side of the railroad.
    - Redwood City (six grade separations)
        - Whipple Ave.
        - Brewster Ave.
        - Broadway Ave.
        - Maple St.
        - Main St.
        - Chestnut St.
    - Santa Clara (major roadway reconstruction)
        - Conversion of De La Cruz overpass to underpass.
    - San Jose (major roadway reconstruction)
        - Conversion of Hedding Street overpass to underpass.

In addition to the roadway improvements, Caltrain would also be a major beneficiary of this investment including:

- Corridor is electrified from 4th & King Station (Transbay overflow terminal) to existing Tamien Station (needed for Caltrain operation).
- There are approximately six miles of Caltrain track electrified between Santa Clara to Tamien to ensure Caltrain operation south of Santa Clara after the HSR track separates from the Caltrain alignment. Electrification of Caltrain's CEMOF maintenance facility is not included.
- Train Controls and Communications are installed from 4th & King Station to Tamien Station.
- Reconstruction of the Redwood City, San Carlos, Belmont, Hillsdale and Hayward Park Caltrain stations in the mid-line overtake area.
- A "rehabilitation" of the existing rails from SF to SJ.
- Improvements to the existing Caltrain tunnels are not included.

The costs for these shared and Caltrain specific improvements are all included in the $5.3 billion estimate. Although Caltrain has indicated a willingness to contribute financially to the overall solution to the Authority, these discussions have not yet taken place, and costs quoted are for all the work required. Clearly the shared use of the existing Caltrain ROW would also be factored into these negotiations. The Authority and Caltrain have a Memorandum of Understanding that has formed the basis for on-going joint work between the two agencies.

5. Blended Service and Transbay Transit Center

The Transbay Transit Center (TTC) in downtown San Francisco is the preferred destination for the statewide HST system in San Francisco. According to recent estimates from the Transbay Joint Powers Authority, the estimated cost of developing the tunnels from 7th and Common Street, to the Transbay Terminal at Fremont and Mission Street is approximately $2.6-$3 billion in year of expenditure dollars. This estimate includes the tunnels, stations and platforms at the TTC that would be able to serve the

high-speed and Caltrain trains. The $2.6 billion cost of this project is not currently included in the $5.3 billion estimate for the blended service described above.

As the Authority needs to make prudent use of limited public funds, the Authority has identified the 4th & King station as a temporary terminal for the State-wide system in San Francisco for the immediate future. Over the long term, the 4th & King station has been planned as an "over flow" terminal for the TTC. The ultimate goal is to have up to five trains phpd be able to serve the TTC. Any additional trains beyond those five would use the available platforms at the 4th & King Station. The Authority has a Memorandum of Understanding with the TJPA and is committed to working with the agency on developing a plan for bringing HST service to the TTC as soon as practicable.

6. Blended Service Next Steps

Caltrain and the Authority continue to coordinate on further technical analysis related to the blended system and its future implementation. Caltrain anticipated having additional simulation results by the end of September and planned on taking those results out to the public and then performing additional "stakeholder requested" analyses in October and November 2011. The results from the additional analyses will help the Authority and Caltrain determine details of the blended solution which makes best sense for the future of Caltrain and HST operations.

7. Letter to the Attorney General's Office

On May 5th of this year, the Authority wrote to the State's Attorney General (AG)[7] regarding the question of the blended solution meeting the requirements of Proposition 1A. A follow-up letter was sent to the AG dated September 9th, 2011[8], in which the Authority provided additional information to the AG based on both the clarifications from Senator Simitian's office and from the on-going operational analysis being performed by Caltrain. As of writing this report, the Authority has not heard back from the AG on this matter.

The Authority's actions moving forward with the environmental impact report (EIR) for the high speed train project between SF and SJ will largely be contingent on the input from the AG. The issues relating to compliance of the system with the criteria prescribed by Proposition 1A, whether there is a time limit to achieving full compliance to the conditions of Proposition 1A in the construction of the statewide system (as requested by Senator Simitian) and to receive guidance on the likely length of time that would be required to complete environmental review under the California Environmental Quality Act for the proposed blended system.

8. Next Steps

The Authority looks forward to the AG's reading on the legal issues related to operating a blended service on the Caltrain corridor. It is expected that the AG's reading will help the Authority in making a decision regarding the appropriate next steps with the on-going environmental process.

The Authority, in partnership with Caltrain, will continue to evaluate the different operating scenarios to better define the potential capacity for a blended Caltrain and HST service on the Peninsula. At this time, it is anticipated that this work will take approximately six months to complete.

Once these two issues are resolved, the Authority will need to look at what the appropriate next steps are for the environmental process for SF to SJ. The Authority and Caltrain will need to discuss whether the blended system, as finally defined, could be implemented or if Caltrain should move forward with their vision for an electrified service regardless of the HST system's anticipated arrival to the Bay Area. It may also be possible that Caltrain may want to develop their own "HST ready" system prior to the HST's arrival in San Jose. This will most likely be related to the availability of sufficient funding in the medium term.

Attachments:

1) *April 18th, 2011 ESG statement*
2) *July 19, 2011 Bay Area Council letter from CEO Jim Wunderman to MTC Chair Adrienne Tissier*
3) *April 25th, 2011 Authority letter to Senator Simitian*
4) *May 18, 2011 Consolidated SF to SJ Design Options from Supplemental Alternatives Analysis Report (SAAR) dated August, 2010*
5) *February 3rd, 2011 Authority CEO Report to the Board*
6) *September 6th, 2011 Caltrain / LTK simulation presentation*
7) *May 5th, 2011 Authority letter to AG Winn*
8) *September 9th, 2011 Authority letter to AG Winn*

Attachment (1)

April 18, 2011 Statement on “High Speed Rail” by Congresswoman Eshoo, State Senator Simitian and State Assembly Member Gordon

APRIL 18, 2011

ESHOO, SIMITIAN, GORDON STATEMENT ON HIGH-SPEED RAIL

Since the passage of Proposition 1A in 2008, each of us has expressed our support for "high-speed rail done right," by which we mean a genuinely statewide system that makes prudent use of limited public funds and which is responsive to legitimate concerns about the impact of high-speed rail on our cities, towns, neighborhoods and homes.

To date, however, the California High Speed Rail Authority has failed to develop and describe such a system for the Peninsula and South Bay. For that reason, we have taken it upon ourselves today to set forth some basic parameters for what "high-speed rail done right" looks like in our region.

We start with the premise that for the Authority to succeed in its statewide mission it must be sensitive and responsive to local concerns about local impacts. Moreover, it is undeniable that funding will be severely limited at both the state and national levels for the foreseeable future.

Much of the projected cost for the San Jose to San Francisco leg of the project is driven by the fact that the Authority has, to date, proposed what is essentially a second rail system for the Peninsula and South Bay, unnecessarily duplicating existing usable infrastructure. Even if such a duplicative system could be constructed without adverse impact along the CalTrain corridor, and we do not believe it can, the cost of such duplication simply cannot be justified.

If we can barely find the funds to do high speed rail right, we most certainly cannot find the funds to do high speed rail wrong.

Accordingly, we call upon the High-Speed Rail Authority and our local CalTrain Joint Powers Board to develop plans for a blended system that integrates high-speed rail with a 21st Century CalTrain.

To that end:
• We explicitly reject the notion of high-speed rail running from San Jose to San Francisco on an elevated structure or "viaduct"; and we call on the High-Speed Rail Authority to eliminate further consideration of an aerial option;
• We fully expect that high-speed rail running from San Jose to San Francisco can and should remain within the existing CalTrain right of way; and,

• Third and finally, consistent with a project of this more limited scope, the Authority should abandon its preparation of an EIR (Environmental Impact Report) for a phased project of larger dimensions over a 25 year timeframe. Continuing to plan for a project of this scope in the face of limited funding and growing community resistance is a fool's errand; and is particularly ill-advised when predicated on ridership projections that are less than credible.

Within the existing right-of-way, at or below grade, a single blended system could allow high-speed rail arriving in San Jose to continue north in a seamless fashion as part of a 21st Century CalTrain (using some combination of electrification, positive train control, new rolling stock and/or other appropriate upgrades) while maintaining the currently projected speeds and travel time for high-speed rail.

The net result of such a system would be a substantially upgraded commuter service for Peninsula and South Bay residents capable of accommodating high-speed rail from San Jose to San Francisco.

All of this is possible, but only if the High-Speed Rail Authority takes this opportunity to rethink its direction.

Over the course of the past 18 months the Authority has come under considerable criticism from the California Legislative Analyst's Office, the Bureau of State Audits, the California Office of the Inspector General, the Authority's own Peer Review Group and the Institute of Transportation Studies at the University of California at Berkeley. The Authority would do well to take these critiques to heart, and to make them the basis for a renewed and improved effort.

Frankly, a great many of our constituents are convinced that the High-Speed Rail Authority has already wandered so far afield that it is too late for a successful course correction. We hope the Authority can prove otherwise.

An essential first step is a rethinking of the Authority's plans for the Peninsula and South Bay. A commitment to a project which eschews an aerial viaduct, stays within the existing right-of-way, sets aside any notion of a phased project expansion at a later date, and incorporates the necessary upgrades for CalTrain - which would produce a truly blended system along the CalTrain corridor - is the essential next step.

Attachment (2)

July 19, 2011 Bay Area Council letter from CEO Jim Wunderman to MTC Chair Adrienne Tissier

July 19, 2011

Adrienne Tissier
Chair, Metropolitan Transportation Commission
101 Eighth Street
Oakland, CA 94607

Dear Chair Tissier:

I am writing to express my deep concern at the continued absence of a clear and positive vision to bring high speed rail up the Peninsula from San Jose to San Francisco and to urge that MTC step into the void and lead a collaborative process to shepherd the process forward. Absent strong regional leadership, I am concerned that the Bay Area is at risk of losing this historic opportunity.

You are, no doubt, all too familiar with the difficulties that the Peninsula project has faced over the past two years and that have now culminated in the California High Speed Rail Authority suspending its work on the Peninsula. In recent months, however, local leaders have begun to discuss variations on a promising new path forward, based on a smaller scale "starter project." There is much common ground among the framework put forward by Senator Simitian, Assembly Member Gordon, and Congresswoman Eshoo; the Caltrain concept; ideas from San Francisco and San Jose; and even the "phased" approach that the Authority has aired.

The Bay Area Council has had discussion with these leaders, and I see substantial areas of agreement among them and with the Bay Area Council. I believe that there can be broad support for a project that:

- Brings both high speed rail and Caltrain electrification to the Peninsula as soon as possible, by utilizing a simple design that can be funded and built quickly.
- Provides sufficient speed, capacity, and flexibility to support an attractive high speed rail service, while also providing adequate capacity for robust Caltrain service.
- Minimizes community impacts by forgoing construction elements that are not needed in the near/mid-term.
- Connects to the Transbay Terminal.
- Meets legal requirements necessary to access Proposition 1A high speed rail bond funds.
- Is designed such that future upgrades, should they be necessary and desired at a future date, would not require unnecessary disruption or wasteful reconstruction.

Some will have concerns additional to those above, and some might quibble with the precise wording—there certainly will need to be a degree of compromise on all sides in order to reach agreement. But agreement, I am confident, is within our reach.

I am concerned, however, that the Bay Area does not appear to be on a path towards agreement, even with so many of the pieces in place. Our region has always been successful when we speak with one

voice, and we have always struggled when we have squabbled amongst ourselves. Currently, our region is speaking with many voices about high speed rail and Caltrain, and the multitude of voices obscures that fact that much of what is being said is consonant. Our inability, as a region, to articulate a clear vision for high speed rail has real consequences: we weaken our support in the state and federal government, we put ourselves at the back of the funding line, and we strengthen those who argue that high speed rail is an impossible fantasy. To succeed at high speed rail and Caltrain electrification, the Bay Area needs to resolve the various project concepts into a single project vision. This is the role that I urge that MTC take on.

The Commission has played this role before: to cite just a few examples, MTC led collaborative partnerships that produced agreement on the high speed rail alignment into the Bay Area, the funding package to sustain Caltrain operations over the next two years, funding for the Transbay Terminal, and design and operational funding for the BART SFO extension. It is entirely appropriate that MTC again serve as the regional convener to guide the development of a consensus Peninsula rail project. In accepting this role, MTC would undoubtedly do a service to Bay Area transportation stakeholders, but I believe that it would also be a service to the High Speed Rail Authority and would help strengthen the statewide project.

For over 60 years, the Bay Area Council has put itself at the service of Bay Area infrastructure improvement, and I cannot think of a project that will have a more significant and longer-lasting effect on this region. Caltrain is a foundational transportation service for the Bay Area, and electrification is its key improvement to meet future transportation needs. High speed rail is *the* signature infrastructure project that will define the Bay Area, California, and even the United States in the 21st Century. I am prepared—more than prepared, eager—to devote the full resources of the Council and our members to make this project a reality and to be an active partner in establishing a vision that has the broad support of Bay Area public officials, business leaders, and residents. The Council is prepared to directly engage stakeholders to explain the process and the project and to build strong and organized support, and we will stay engaged for as long as is necessary to fund and deliver the project.

I hope that MTC will agree to take up this challenge on behalf of the Bay Area. Please feel free to contact me to discuss how the Bay Area Council can help.

Best,

Jim Wunderman
President and CEO

P 415.981.6600
F 415.981.6408
201 California Street, Suite 1450
San Francisco, California 94111

Attachment (3)

April 25th, 2011 Authority letter to Senator Simitian

CALIFORNIA
High-Speed Rail Authority

April 25, 2011

The Honorable Sen. Joseph Simitian
Eleventh Senate District
State Capitol, Room 2080
Sacramento, CA 95814

Dear Senator Simitian,

Thank you for your request to obtain the High-Speed Rail Authority's thoughts regarding the joint statement you made with Congresswoman Eshoo and Assemblyman Gordon, for discussion when we appear before the Senate Budget Subcommittee No. 2 on Thursday, April 28, 2011.

To adequately prepare for the hearing, and to ensure the Authority can provide specific and thorough responses as requested, it would be helpful to ensure we understand the proposal for a blended system and the assumptions on which it is based. Your feedback on the following questions would be most helpful to properly assess the blended system proposal:

- We interpret the proposal as eliminating aerial viaducts in <u>all</u> locations throughout the San Francisco to San Jose Corridor *and* to remain within the existing Caltrain right of way, either at grade or below grade. The high-speed train system as defined in the Authority's performance criteria involves a fully grade-separated guideway. Does the proposal for a blended system include grade separations, even if construction must occur outside the existing right of way and even if the right of way must expand beyond its existing boundaries?

- We interpret the proposal to suggest the Authority cease its planning for a full build-out of the high-speed train system in the San Francisco to San Jose Corridor to the year 2035, and that the Authority should limit its planning to the near -term, blended system proposal. We are not aware of a precedent for a short-term planning focus for a major transportation infrastructure project to the exclusion of long-term planning. We would appreciate being directed to any such precedent.

- To qualify for Proposition 1A bond funding, the high-speed train system must be designed to achieve various characteristics, enumerated in Streets and Highways Code section 2704.09, including:

    - maximum nonstop service travel time between San Francisco and LA Union Station of 2 hours, 40 minutes;
    - maximum nonstop service travel time between San Francisco and San Jose of 30 minutes ;
    - achievable operating headway (time between successive trains) of 5 minutes or less; and

- capability for trains to transition intermediate stations, or bypass those stations, at mainline operating speed.

These characteristics are consistent with the Authority's performance criteria for the high-speed train system, which are designed to deliver a system with very high speeds and safe, frequent, reliable service capable of accommodating a wide range of passenger demand. Is the proposal based on any assumptions or analysis of these performance criteria that might inform our assessment?

- In preparing to respond to the proposal for a blended system, the Authority will again, as it has done in the past, confer with Caltrain regarding its operations plans if electrified. The Caltrain Electrification Program Final EIR indicates that Caltrain plans for increased service to 114 trains per day with electrification in the near term (2015), but also has plans for up to 172 trains per day by 2035. Caltrain's plans are relevant to determining whether the blended system proposal would be physically capable of complying with Proposition 1A performance criteria, and the number of tracks which would be required to meet the combined capacity of Caltrain and the high-speed service. Is the proposal based on any assumptions regarding the level of Caltrain service in the future that would inform our assessment?

Any input you can provide on these questions will assist the Authority's staff, consultants, and legal counsel with preparing complete and thorough responses for the hearing.

Sincerely,

Roelof van Ark
Chief Executive Officer
rvanark@hsr.ca.gov
(916) 384-1488, direct

cc: Congress-member Eshoo
Assembly-member Gordon

Attachment (4)

May 18th, 2011 Consolidated SF to SJ Design Options From Supplemental Alternatives Analysis Report(SAAR) dated August 2010.

San Francisco StationTransbay Transit Center

San Francisco Station 4th & King

Millbrae (SFO) Station

Potential Mid-Peninsula Station Location Redwood City

Potential Mid-Peninsula Station Location Palo Alto

Potential Mid-Peninsula Station Location Mountain View

San Jose Diridon Station

0 4TH & KING

22ND STREET

1 BAYSHORE

2 SOUTH SAN FRANCISCO

SAN BRUNO

3 MILLBRAE

BROADWAY

BURLINGAME

SAN MATEO

4 HAYWARD PARK

HILLSDALE

BELMONT

SAN CARLOS

5 REDWOOD CITY

ATHERTON

MENLO PARK

6 PALO ALTO

CALIFORNIA AVE

SAN ANTONIO

7 MOUNTAIN VIEW

SUNNYVALE

LAWRENCE

8

9 SANTA CLARA

COLLEGE PARK

SAN JOSE

Option A

Option B

Option B1

LEGEND:

- AERIAL VIADUCT (HST Only)
- AERIAL VIADUCT
- AT GRADE
- OPEN TRENCH
- COVERED TRENCH/TUNNEL
- DEEP TUNNEL (HST Only)
- 0 SUBSECTION NUMBER / LIMITS

SAN FRANCISCO TO SAN JOSE SECTION

DESIGN OPTIONS A, B, & B1

Attachment (5)

February 3rd, 2011 Authority CEO report to the Board

CALIFORNIA
High-Speed Rail Authority

DATE: **February 3, 2011**
TO: **Chairman Pringle and Authority Board Members**
FROM: **Roelof van Ark, Chief Executive Officer**
RE: **Agenda Item 10: February 2011 CEO's report to the Board**

General Update

It was very encouraging to note that President Obama has clearly kept investment into high-speed rail (HSR) infrastructure projects a priority to boost the economy and job creation of the country. It was even more encouraging that he singled out California and the Midwest as projects which are ready to go. The House Transportation and Infrastructure Committee Chairman John Mica (R-FL) has announced hearings/listening sessions around the United States in the month of February. These hearings may be focused on specific topics related to the successful implementation of HSR, and the period of February 21-23 has been allocated to Oregon (Portland), Washington (Vancouver), and the Central Valley and Southern California.

General Outreach

- Assembly Select committee on High-Speed Rail: Vice Chairman Tom Umberg and I updated the committee on the status of the project.
- Spoke with the Southern California transportation agency CEOs via conference call.
- Received a Chinese delegation both here in Sacramento as well as in Fresno, where they visited the Initial Construction Section. They made further offers of financial support to the project.
- The Japanese Embassy arranged a very successful HSR forum in Los Angeles on Jan 14 which attracted more than 400 participants and many elected officials.
- Met with various elected officials on the issue of Small Business Enterprises and their participation on our project.
- Jan 25th meetings with Gilroy and Morgan Hill city officials.
- Met with the Consul Generals of both Germany and the United Kingdom in San Francisco to update them on the status of the project.
- Professional Engineers in California Government (PECG): Members of the Authority's technical team attended a workshop in Washington D.C., arranged by UNIFE and the FRA, at which technical comparisons between the European technologies and those envisaged for very high-speed rail in the USA were discussed.

Authority Outreach

The Authority continues with its outreach and cooperation with local communities and stakeholders holding more than 47 meetings were held during the month of January.

LA Union Station

We are in discussion with the LA MTA regarding the acquisition of the LA Union Station site and associated real estate for the purpose of right of way preservation. Details will be discussed with the Board in closed session pursuant to Government Code section 11126(c)(1).

Budget Update

The Authority has appeared recently at both the Assembly and Senate Budget hearings. It is clear that due to the dynamic nature of the project that certain aspects of the budget will need to be re-visited, as we have not been able to finalize certain aspects of the budget, such as the costs in the coming budget year for joint work conducted with Caltrans, Caltrain, and with ongoing ridership forecasting work and additional staff needs for the Authority.

Update on 2011 Schedule Issues

- Clearly, we need to achieve our ROD/NOD for the two Central Valley sections in the fall of 2011. This will allow for contracts to be placed for the Initial Construction Section by mid-2012. To meet this date, the Authority is planning to issue a Request for Expression of Interest (RFEI) to interested parties, sometime within the next few weeks, with the aim to collect data from the market and to judge the interest of the industry. Following the return of the RFEI information to the Authority, it is our intention to issue a Request for Qualification (RFQ) to the market at approximately the middle of the year 2011. This will be used to pre-qualify interested bidders, or bidder consortiums, for the construction of the "Initial Construction Section" in the Central Valley. Following this prequalification, the Authority will go to market at the end of the year, with a Request for Proposal (RFP) which will lead to one or more contracts being placed for the infrastructure contracts in the Central Valley during the second half of 2012.
- To meet the various funding requirements, particularly the release of Prop 1A bond funds, the Authority will need to submit the required "Funding Plan" to the Legislature by early October 2011.
- To meet the requirements of the Senate Bill #783 (Ashburn) from the 09/10 session the Authority will need to submit a revised Business Plan on or before January 1, 2012. A draft of the plan needs to be made public 60 days before a Public Hearing, thus we are aiming at having this public draft available on October 1, 2011. To meet the requirements of both the "Funding Plan" as well as the "Business Plan" the Authority will be bringing to the board, in the March to April time frame, various scenarios which will define possible "Initial Operable Sections"
- To meet the requirements of both the "Funding Plan" as well as the "Business Plan" the Authority will be bringing to the board, in the March to April time frame, various scenarios which will define possible "Initial Operable Sections"
- Two sections of the alignment, namely San Francisco to San Jose and LA to Anaheim, are quite technically challenging. Furthermore, both of these sections, where high-speed trains may operate at reduced speeds, offer great opportunity for phased implementation that can also bring benefits to existing services. We will be working with the local and regional agencies and the communities to incorporate a phased implementation approach into the project environmental documents while ensuring that the environmental documents would continue to portray the full build out of the section as well, as required by law. Considering this, and as these sections are no longer ARRA sections, we recommend that the draft EIR not be issued before the end of 2011 for these segments. This will allow all stakeholders to participate in the further investigation and development of the alignments, and some of the technical complexities of the operations and alignments can be further analyzed.

FPPC Closes Investigation Relating to Past Travel Reporting, No Violation

The FPPC has written letters to all affected board members as well as Mr. Mehdi Morshed (former ED of the Authority) with the following content: “Our investigation determined that there was no evidence that you committed a violation of the Act. As a result we are closing the case without taking any further action.”

Communications and Outreach

Starting mid-January, 2011, Katherine Strehl has become the Program Manager of the Ogilvy Team, working out of the Authority’s offices in Sacramento.

Meeting with the FRA

During the week Feb 7th to 11th, the FRA will be visiting the Authority to do a project review and do an expert analysis of the Central Valley Initial Construction Section

Staffing at the Authority

Unfortunately, the situation with respect to the hiring of exempt staff has not yet been resolved as no legislation has been passed to address this situation. The situation is critical as the work at the Authority continues to increase. Even the hiring of state staff remains limited, as the hiring freeze instituted by the former governor still seems to remain in force.

Blended Caltrain/High Speed Rail Operations Simulation Preliminary Findings

LTK Engineering Services

Presented On:
September 6, 2011

Purpose

- Is the “blended system” feasible?
- Operational assessment only
- Proof of concept
- Role of LTK Engineering Services
- Work scope
  - Build virtual Caltrain corridor
  - Simulate “what if” scenarios to assess capacity

Capacity Analysis Status

- End of July
  - 1st set of simulations (79mph)
- August / September
  - Outreach (Part I)
  - 2nd set of simulations (110mph)
- End of September
  - Complete simulations
  - “Spot” gate down time assessment
  - Draft analysis
- October / November
  - Outreach (Part II)
  - Stakeholder requested analysis

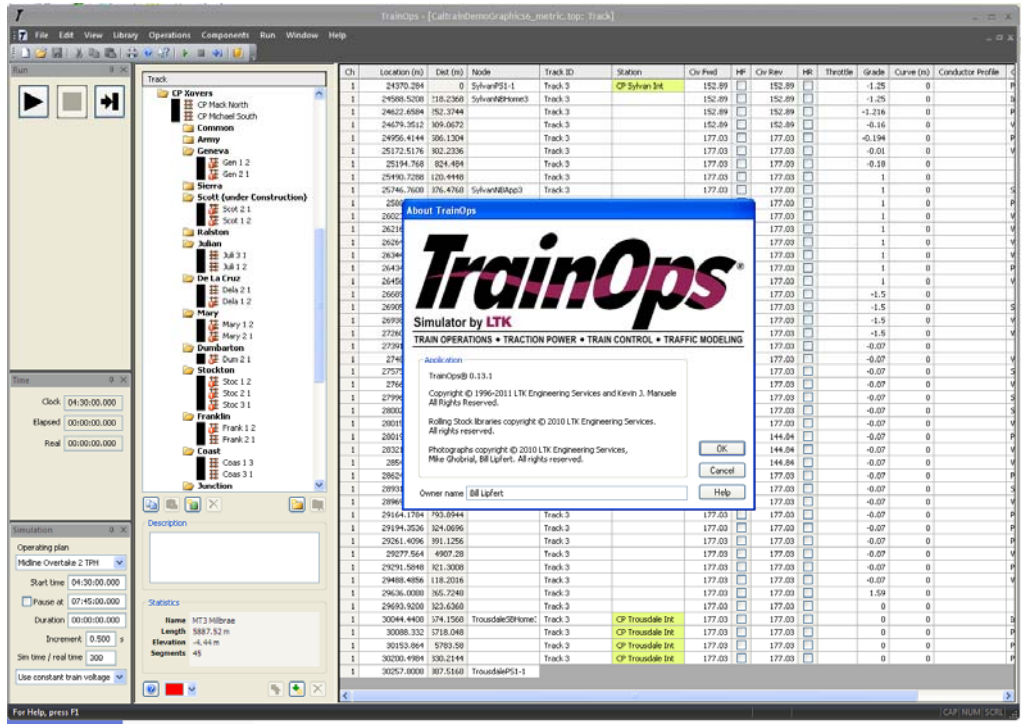
Presentation Topics

- About the Model
- Methodology / Approach
- Preliminary Results (to date)
- Next Steps
- Outreach Update

TrainOps®, the LTK Simulation Tool

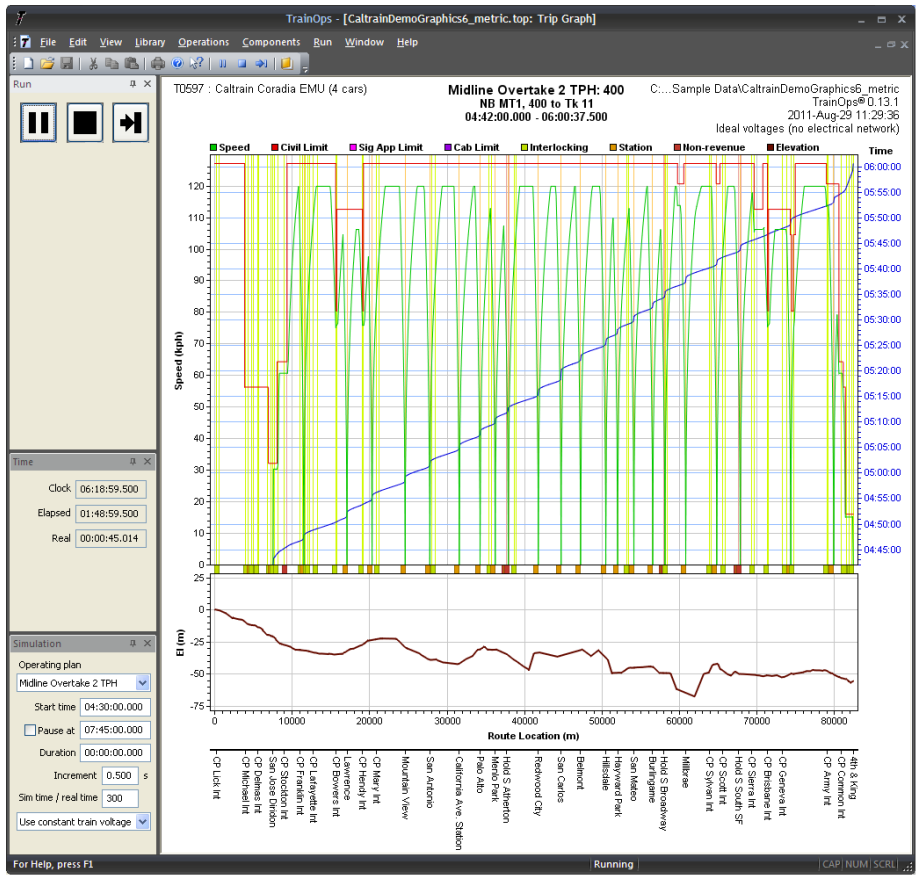
TrainOps®, the LTK Simulation Tool

- First developed in 1996 by LTK Engineering Services,
- Continually enhanced and upgraded to run in the latest Windows operating systems,
- Enhanced to support the unique functional attributes of Caltrain's planned CBOSS Positive Train Control system,
- Subject to extensive internal QA/QC procedures, including 800+ functional tests and large database regression tests,



Rail Networks with TrainOps® Applications

- Mainline Passenger Rail: Amtrak, Denver FasTracks, GO Transit (Toronto), Long Island Rail Road, NJ Transit, SEPTA,
- Heavy Rail: Massachusetts Bay Transportation Authority (Blue, Orange and Red Lines), New York City Transit,
- Light Rail: Denver, Minneapolis, Phoenix, Portland TriMet, Portland Streetcar, Sacramento, Salt Lake City, Tucson.



TrainOps® Model Calibration and Validation

- Traditional TrainOps® analyses start with a calibration effort that confirms simulation model results accurately replicate existing conditions,
- TrainOps has been successfully calibrated to existing operations at MBTA, NYCT, NJT, Amtrak and other rail networks,
- Calibration inappropriate for Caltrain/CaHSR Blended Operations Analysis because all variables (infrastructure, operating plan, vehicles, train control, dwell times) are changing,
- Instead, LTK focused on performing sensitivity testing of each model input (using a range of realistic and then extreme inputs), validating that the model responds as expected to each change in input.

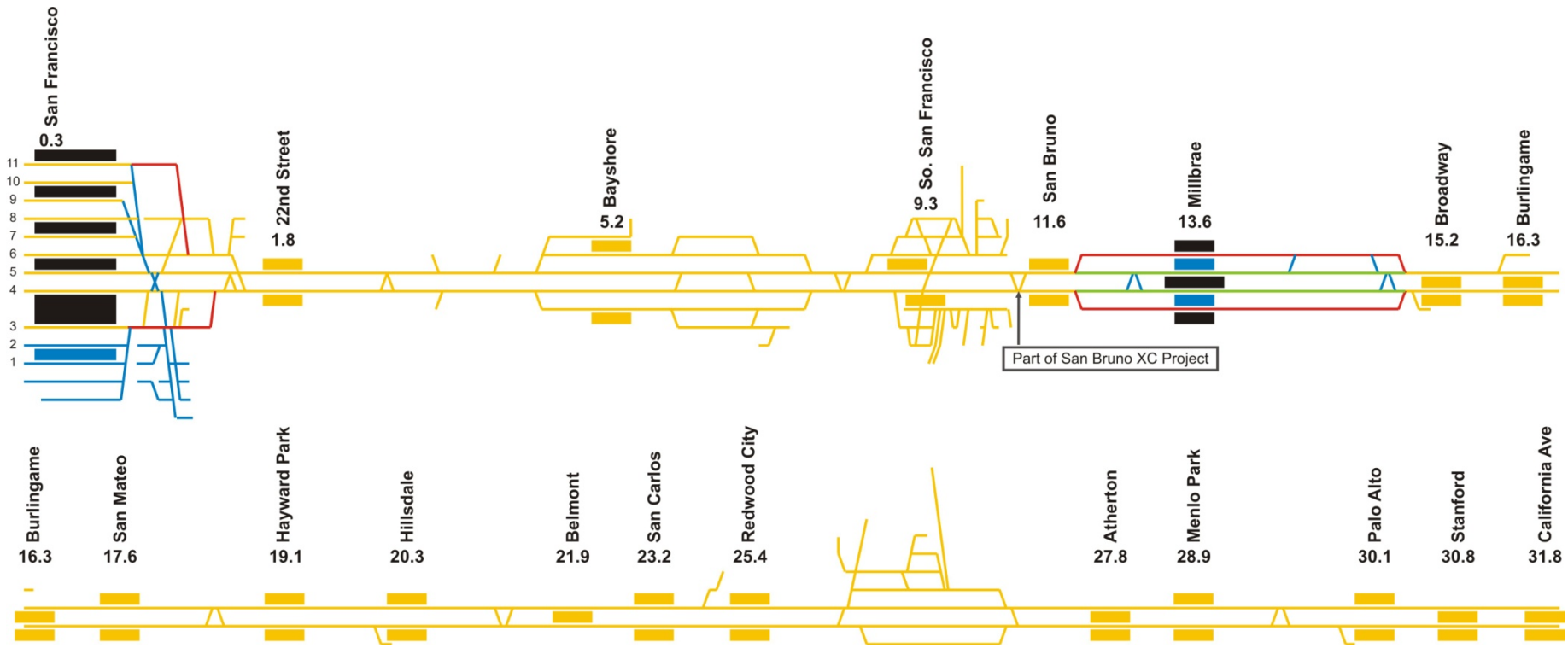
Simulation Methodology

Simulation Methodology
On-going and Planned Caltrain Capital Projects

- San Bruno improvements,
- Positive Train Control (PTC/CBOSS),
- Caltrain Electrification,
- South Terminal and Santa Clara Station Projects

Simulation Methodology

Baseline HSR Improvements at San Jose, Millbrae, San Francisco

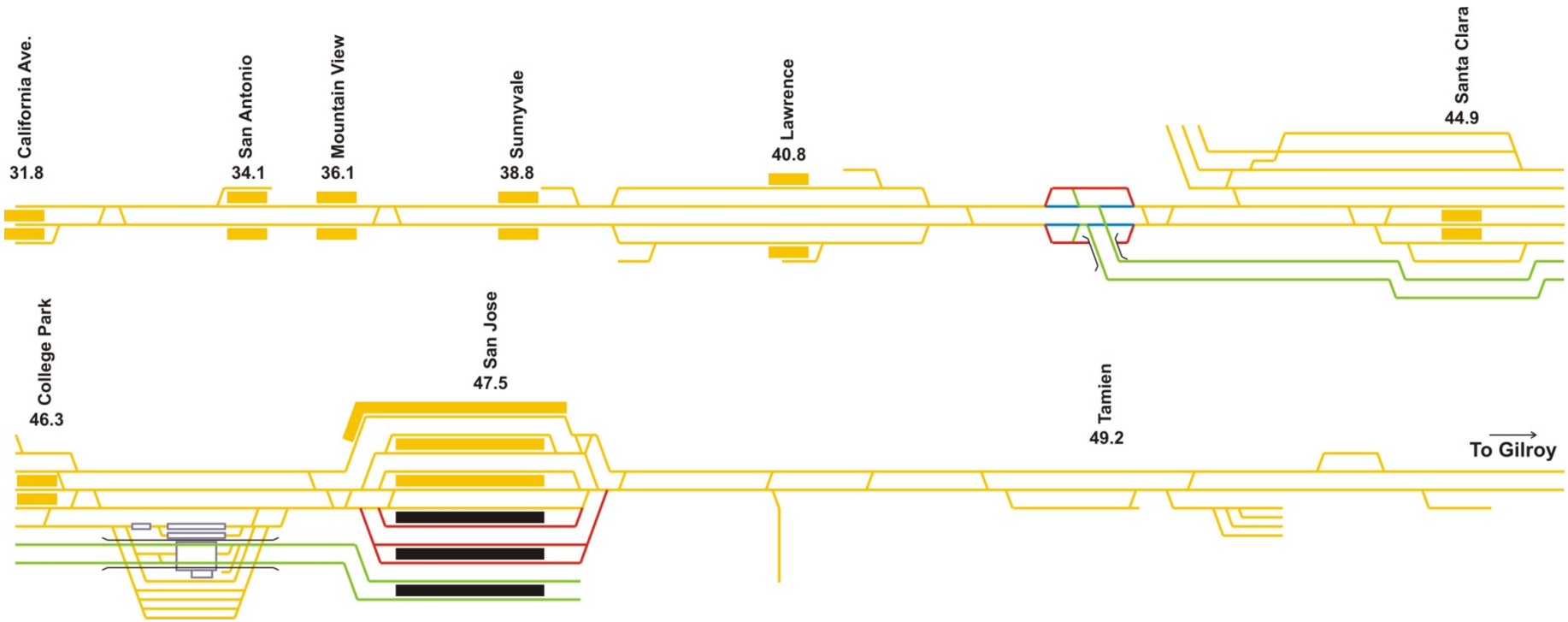


LEGEND

- Existing Track (No Change)
- Tracks / Platforms to be Removed
- Tracks to be Added (for Caltrain)
- Tracks to be Added (for HSR)
- New Platforms

Simulation Methodology

Baseline HSR Improvements at San Jose, Millbrae, San Francisco



LEGEND

- Existing Track (No Change)
- Tracks / Platforms to be Removed
- Tracks to be Added (for Caltrain)
- Tracks to be Added (for HSR)
- New Platforms

Simulation Methodology

Blended Caltrain/High Speed Rail Capacity Simulation Scenarios

Caltrain/ HSR Peak Hour Service Levels	Scheduling (With Baseline HSR Infrastructure)		Infrastructure (With Rescheduling)	
	No Caltrain Rescheduling	Caltrain Rescheduling	North 4 Track - Millbrae to Bayshore	Midline 4 Track - Hayward Park to Redwood City
Speed: 79/79 (Caltrain/HSR)				
6/1	●			
6/2	●	●	●	●
6/3	●	●	●	●
6/4				●
Speed: 79/110 (Caltrain/HSR – 110 MPH HSR Operation Only on Overtake Track)				
6/1				
6/2				●
6/3				●
6/4				●
Speed: 110/110 (Caltrain/HSR)				
6/1				
6/2		●		●
6/3		●		●
6/4				●

Simulation Methodology

Caltrain & HSR Approved Train Control Inputs

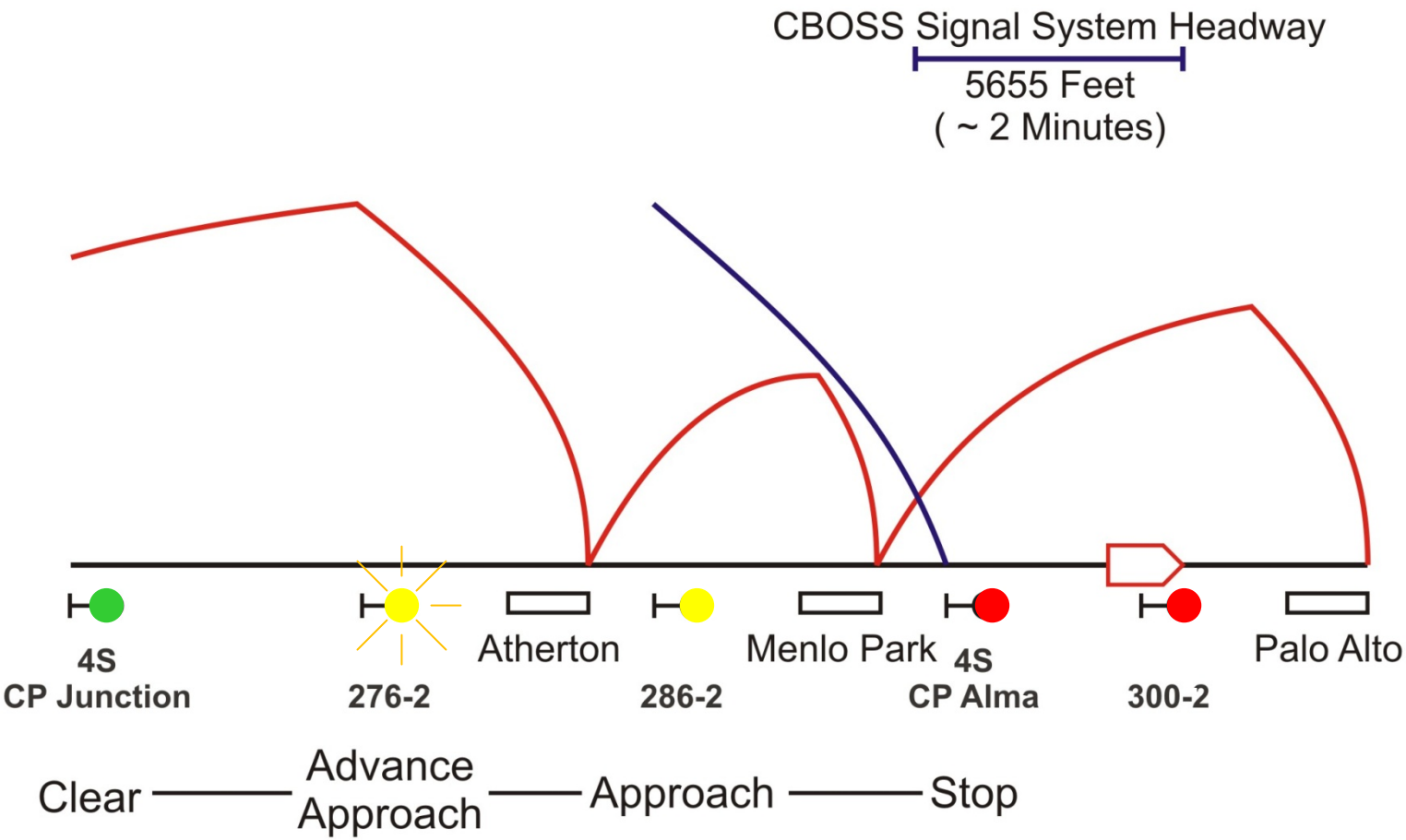
Functionality	Approved Simulation Model Value
Block Length	Actual or assumed 4000 ft Max.
Response time for signal system/CBOSS - automatic territory	6 seconds
Response time for signal system/CBOSS - interlocking territory (fleeting routes)	14 seconds
Response time for signal system/CBOSS - interlocking territory (train waiting for conflicting route to clear)	30 seconds
Brake rate for station stop (with or without near side grade crossing enforcement)	1.8 MPHPS
Brake rate for station stop (with or without near side grade crossing enforcement) for HST	1.5 MPHPS
Brake rate for signal at stop or stop & proceed	1.2 MPHPS
Brake rate for civil speed enforcement	1.2 MPHPS

Simulation Methodology

Train Control (Continued)

- Simulations reflect PTC System Requirements that call for 2 second maximum update interval,
- With mid-block upgrades, engineer can accelerate to higher speed (even if more permissive than the previous wayside signal indication), limited only by the train-specific CBOSS Braking Profile to the next occupied track circuit (or interlocking signal at Stop),
- CBOSS supports 3:10 following headways or better, a significant improvement over current 5-6 minute minimum supportable headways with wayside signals.
- Assumes CaHSR is fully interoperable with CBOSS.

Simulation Methodology
Train Control

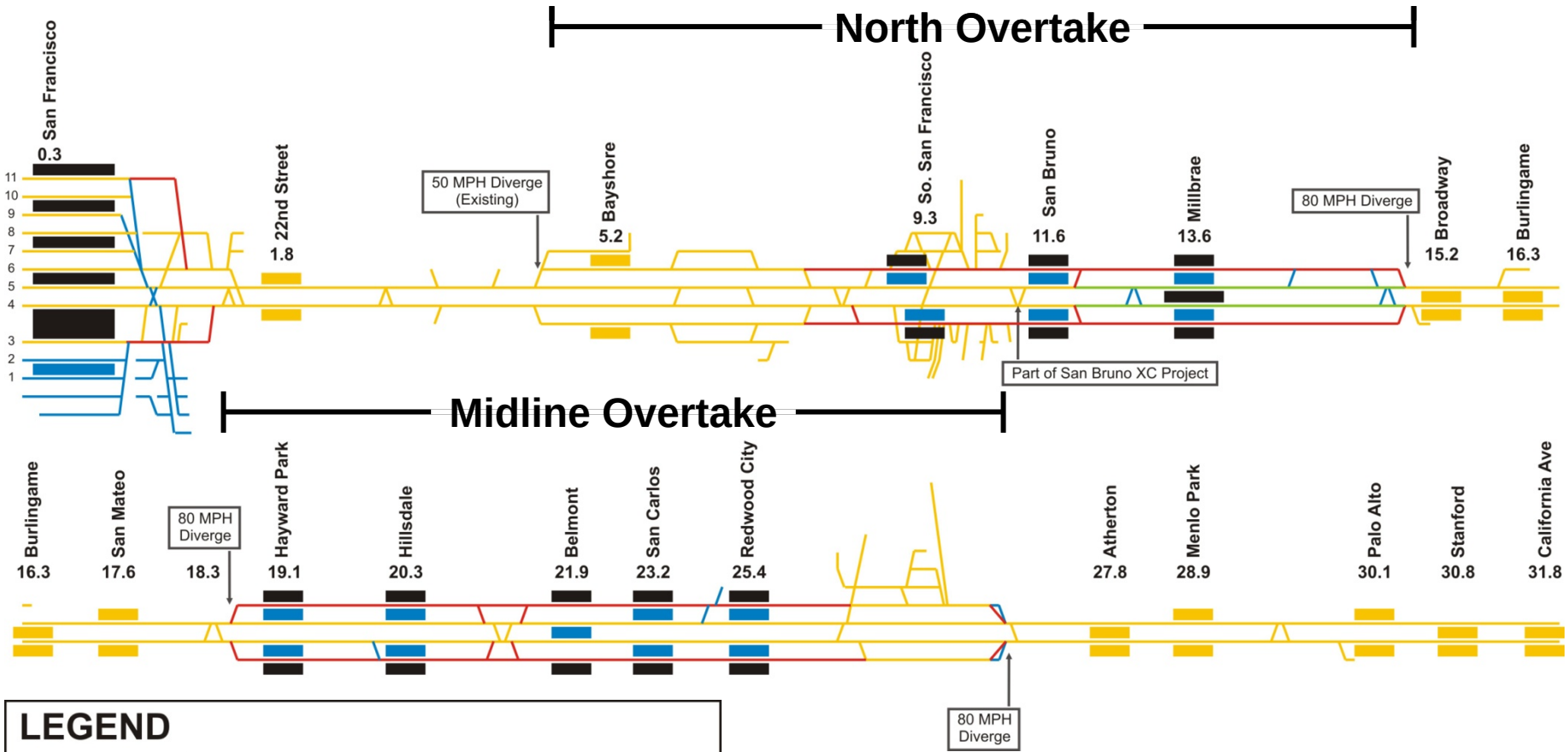


Simulation Methodology
Infrastructure Solution Guiding Principles

- Overtakes should improve integration of commuter and high speed rail services,
- Guiding principles for new infrastructure to support overtakes:
  - Sufficiently long to support 7+ minute travel time difference between commuter and HSR trains,
  - Leverage existing investments in four-track mainline,
  - Stay within ROW and minimize impacts to communities along the Corridor,
  - Consistency with 15% design documents.

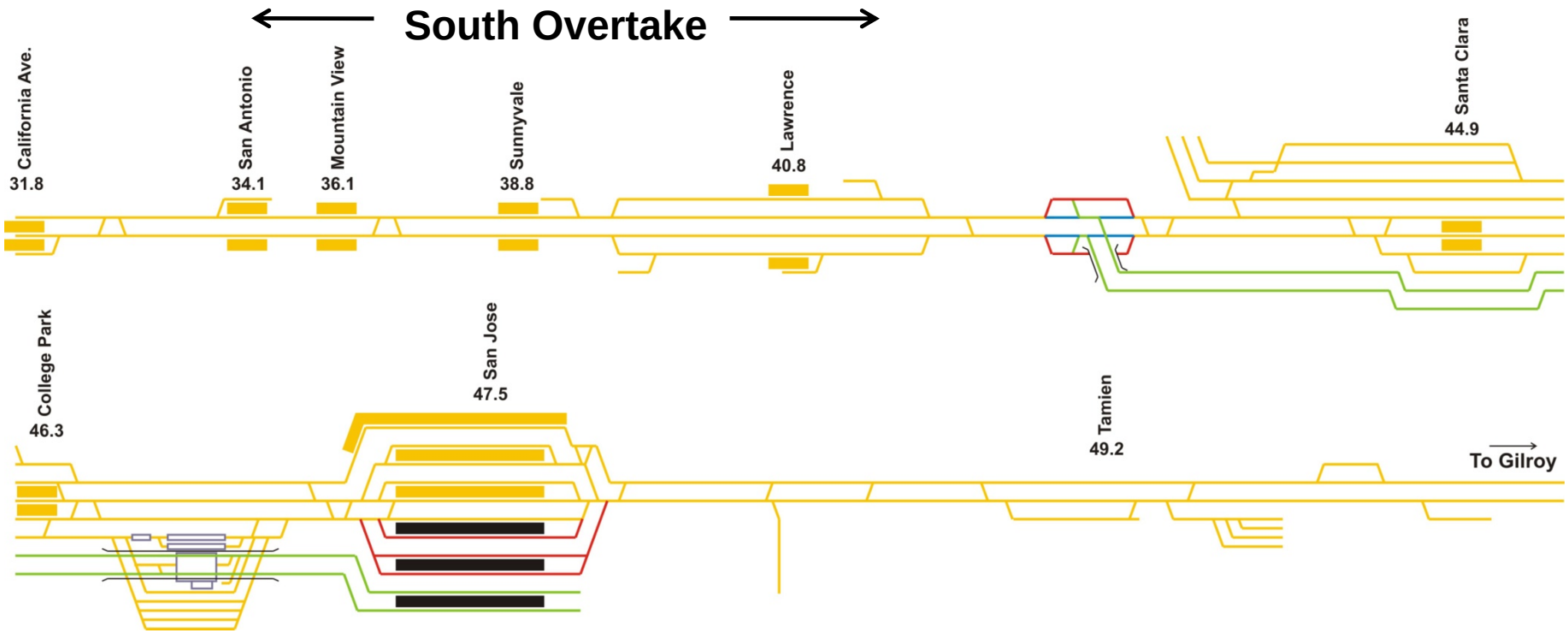
Simulation Methodology

Potential 4-Track Segments for HSR Overtakes



Simulation Methodology

South Overtake and 3rd Track to be Tested



LEGEND

- Existing Track (No Change)
- Tracks / Platforms to be Removed
- Tracks to be Added (for Caltrain)
- Tracks to be Added (for HSR)
- New Platforms

Simulation Methodology
Tested Operating Plan

- 6 TPH commuter train volume in each direction,
- Peak Period skip stop limited service,
- Stop frequency based on ridership,
- Enhanced performance of EMUs allows SJ-SF trip times comparable to “Baby Bullet” with more stops,
- All stations served,
- 6 Percent Schedule Margin included,
- HSR operating plan unavailable (no randomization in NB departures from San Jose).

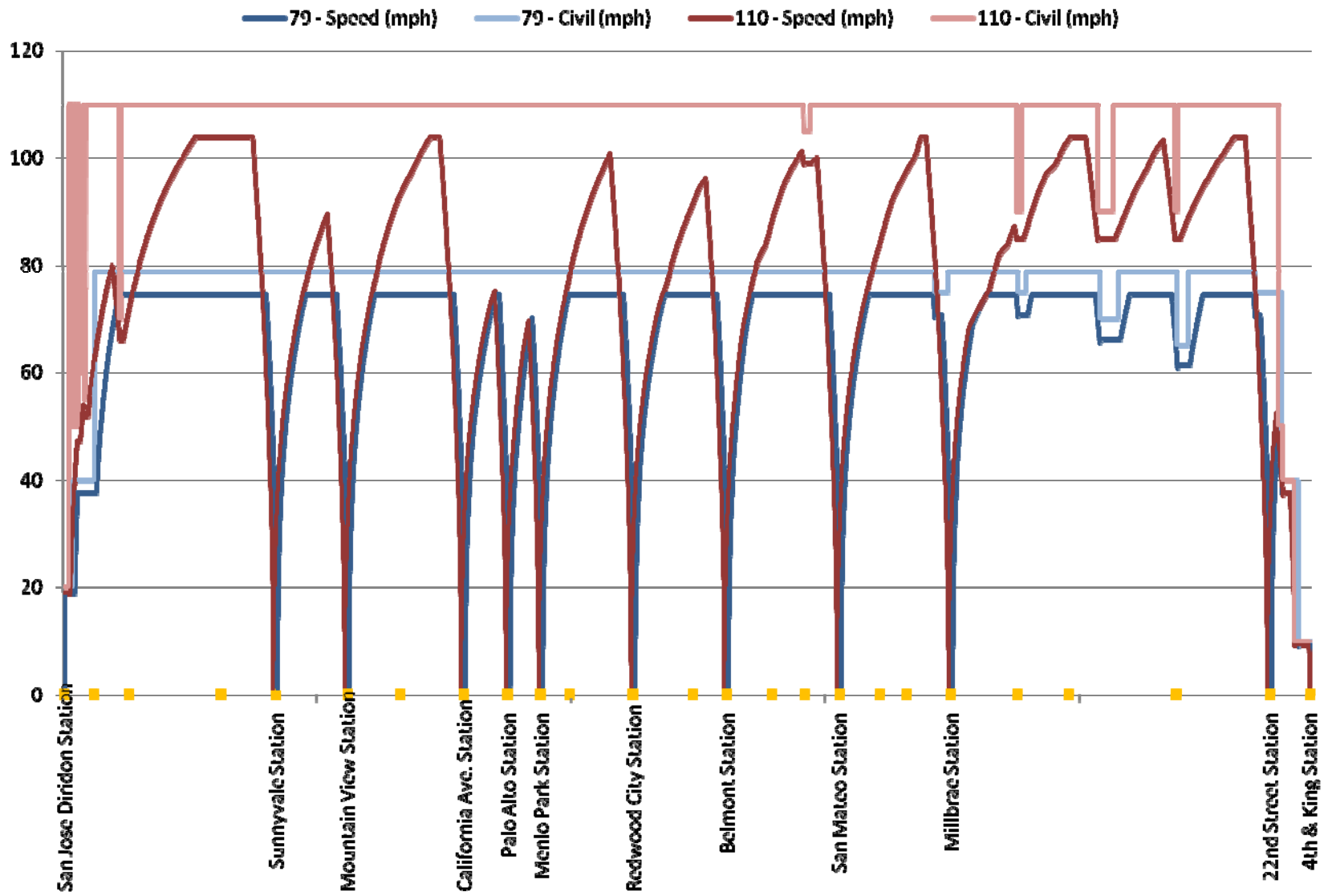
Simulation Methodology

Caltrain 6 TPH Tested Concept (79/79 with 6% Margin)

San Jose Diridon Station	6:40	6:50	7:00	7:10	7:20	7:30
College Park Station						
Santa Clara Station			7:04			7:34
Lawrence Station	6:47			7:18		
Sunnyvale Station	6:51	6:59	7:10	7:21	7:29	7:40
Mountain View Station	6:55	7:03	7:14	7:25	7:32	7:44
San Antonio Station		7:06			7:35	
California Ave. Station			7:18			7:48
Palo Alto Station	7:02	7:11	7:21	7:31	7:40	7:51
Menlo Park Station	7:04	7:14		7:33	7:42	
Atherton Station			7:24			
Redwood City Station	7:08	7:18	7:28	7:38	7:47	7:57
San Carlos Station		7:22			7:50	
Belmont Station	7:13			7:42		
Hillsdale Station	7:15	7:25	7:33	7:45	7:54	8:02
Hayward Park Station					7:56	
San Mateo Station	7:19		7:37	7:48		8:06
Burlingame Station	7:21			7:50		
Broadway Station						8:09
Millbrae Station	7:25	7:32	7:42	7:54	8:02	8:12
San Bruno Station		7:35			8:05	
South SF Station			7:47			8:17
Bayshore Station		7:42				
22nd Street Station					8:14	
4th & King Station	7:40	7:50	7:58	8:09	8:20	8:29

Simulation Methodology

Caltrain 110/110 Scenarios – Velocity Profile (Zone Express)



Operations Simulation Preliminary Findings

Preliminary Findings
79/79 Scenario

C/H	Trip Times		Caltrain Peak Hour Service Intervals (at Palo Alto NB)	Additional Caltrain Stops Per Hour Required to Achieve Delay-Free Overtakes	Reliability (Signal Delay)	Infrastructure Need
	C	H				
6/1	60	48	10/5/7/17/9/12	None	OK	HSR Baseline
6/2		47	19/5/7/17/5/7	None	OK	HSR Baseline
6/3		49	5/15/6/13/5/16	None	NOT OK	HSR Baseline
6/3		45	12/6/12/9/11/10	1	OK	Midline 4-Track Overtake
6/4		46	6/14/10/4/14/12	2	OK	Midline 4-Track Overtake

Preliminary Findings
79/110 Scenario

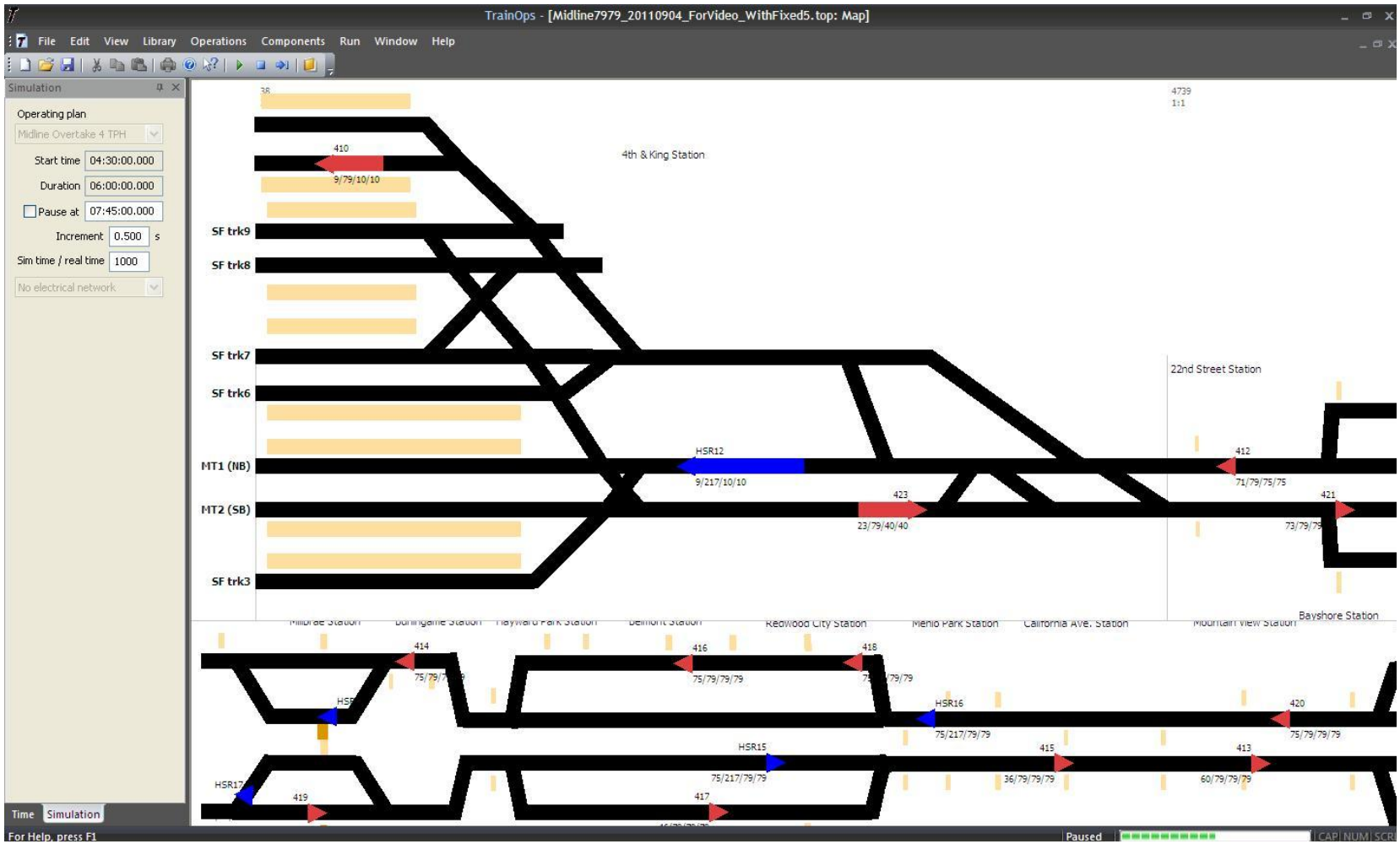
C/H	Trip Times		Caltrain Peak Hour Service Intervals (at Palo Alto NB)	Additional Caltrain Stops Per Hour Required to Achieve Delay-Free Overtakes	Reliability (Signal Delay)	Infrastructure Need
	C	H				
6/1	60	N.A.	N.A.	N.A.	N.A.	Midline 4-Track Overtake
6/2		43	8/10/12/9/9/12	0	OK	Midline 4-Track Overtake
6/3		43	12/7/13/7/11/10	0	OK	Midline 4-Track Overtake
6/4		TBD	TBD	TBD	TBD	Midline 4-Track Overtake

Preliminary Findings
110/110 Scenario

C/H	Trip Times		Caltrain Peak Hour Service Intervals (at Palo Alto NB)	Additional Caltrain Stops Per Hour Required to Achieve Delay-Free Overtakes	Reliability (Signal Delay)	Infrastructure Need
	C	H				
6/1	57	N.A.	N.A.	N.A.	N.A.	HSR Baseline
6/2		37	6/10/14/6/10/14	0	OK	Midline 4-Track Overtake
6/3		37	14/5/13/6/14/8	2 (and Changes SJ-CP Junction)	OK	Midline 4-Track Overtake
6/4		TBD	TBD	TBD	TBD	Midline 4-Track Overtake

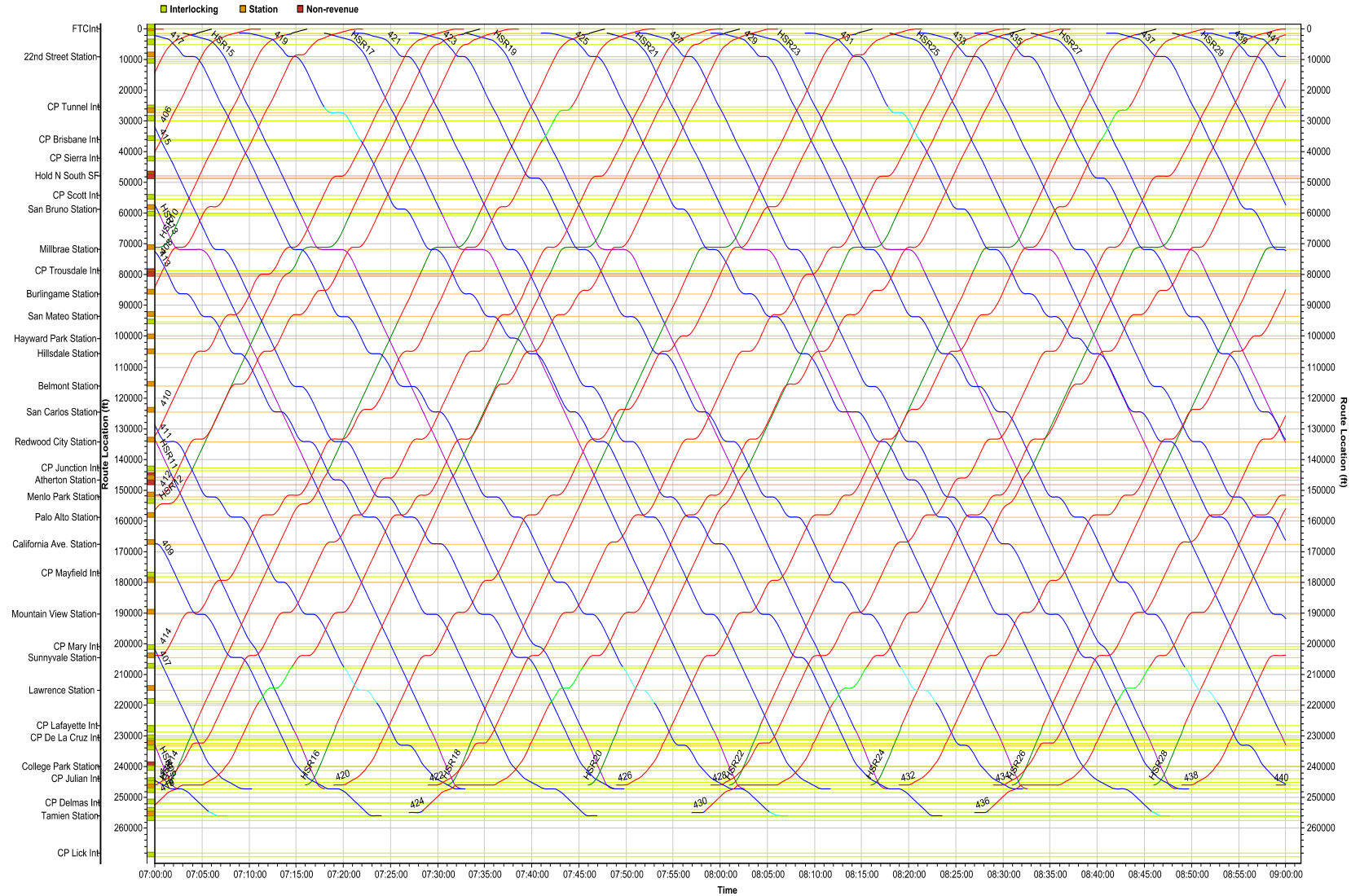
Preliminary Findings

TrainOps Video - 79/79 Scenario with 6/4, Midline Overtake



79/79 Scenario – Midline 4 Track Overtake

4 HSR Peak TPH – Caltrain Rescheduling – 7 - 9 AM



Conclusions

- No specific signal system capacity “pinch points” were highlighted by simulation
- CBOSS with current signal block spacing supports 3:10 minute or better following headways, a significant improvement over current 5-6 minute minimum supportable headways with wayside signals.
- North and South Terminals have sufficient operating capacity (midday storage requires additional investigation),

Conclusions –
Only Baseline HSR Infrastructure Scenarios

- Sufficient capacity available for HSR up to 2 peak TPH (3 TPH produces cascading delays to Caltrain, 4 TPH infeasible),
- Caltrain rescheduling to create slots for HSR are critical in peak period,
- Caltrain rescheduling produces less uniform service delivery at high ridership (6 TPH) stations,
- Caltrain AM peak trip times average 60 minutes in 79 MPH scenarios, 57 minutes in 110 MPH scenarios,
- HSR AM peak trip times average 45-49 minutes with Caltrain rescheduling (depending on TPH)

Conclusions –
4-Track Overtake Locations

- Sufficient capacity available for HSR for up to 4 peak TPH,
- 79/110 scenarios provide more reliable overtakes than 79/79 scenarios but both are operationally feasible,
- Midline 4-Track Overtake is operationally superior than alternative overtake locations:
  - Allows HSR to gain on one Caltrain before overtake, gain on a second Caltrain after overtake, in both directions,
  - Has five Caltrain stations and no HSR stations, maximizing HSR/Caltrain travel time differential for delay-free overtakes,
  - Has higher percentage of stopping Caltrain trains than other locations, promoting uniformity of Caltrain service (limits number of additional stops needed to support reliable overtakes),
- Increased risk of HSR delays if Midline Overtake length is reduced.

Next Steps

Next Steps

- Areas for Cooperation Between HSR and Caltrain
  - Distribution of Schedule Margin (Pad),
  - Dwell Times,
  - “Hold for Schedule” Operating Plans,
  - Randomization (Perturbations),
- Additional Simulations
  - 79/110 6/4 with Midline 4-Track Overtake,
  - 110/110 6/2 with Caltrain Rescheduling
  - 110/110 6/3 with Caltrain Rescheduling
  - 110/110 6/4 with Midline 4-Track Overtake,

Next Steps (Cont.)

- Identify Solutions for Midday Storage and Maintenance
- Test Additional Infrastructure
  - South Overtake,
  - Corridor Third Track,
- Gate Down Time Analysis

Coordination with CaHSR Team

Operations planning/simulation coordination meetings held:

- May 2 (initial model assumptions, HSR vehicles),
- June 30 (initial model findings),
- July 29 (additional model findings),
- August 3 (modified simulation criteria),
- August 8 (additional simulation criteria),
- August 17 (revised train control assumptions),
- August 26 (additional model findings),
- August 30 (follow-up, prepare for Sept. 6 Sacramento meeting).

Outreach Update

Outreach Update
Meetings

Key Public Venues
- San Mateo Rail Corridor Working Group
- Friends of Caltrain
- Peninsula Cities Consortium

Other
- MTC / BAC
- SF Rail Working Group
- VTA
- SPUR
- PFRUG
- Cities (as requested)

Outreach Update
Key Comments

- With caution, support for “blended system” concept
- Some understanding of Prop 1A and environmental clearance challenges
- Nervousness about overtake location and design
- Strong grade crossing concerns with increased trains

Outreach Update
Requested Additional Simulations

- Expand to Transbay Terminal
- Additional Overtake Options
- Caltrain Operating Plan Options

Discussion

Attachment (7)

May 5th, 2011 Authority letter to AG Winn

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

May 5, 2011

Ms. Amy Winn,
Deputy Attorney General
AG's Office

Dear Ms. Winn,

As you know, Senator Simitian in his capacity as Chairman of the Senate Budget Sub-Committee 2, has requested that the Authority consider a proposal for a "blended system" along the Peninsula as described in an April 18, 2011 press release. (Copy attached.) Based on this request, as well as subsequent hearings, we have the following request for analysis or legal guidance from your office:

1. In order to address the viability of this blended system, i.e., whether such a system could be built compliant with Proposition 1A design requirements, I am specifically asking for a legal interpretation of Streets and Highways Code section 2704.09, subdivision (e) (transition intermediate station requirement), because I have concerns about how the blended system can meet this requirement.
2. We have been requested to clarify whether there are any time limitations on achieving full compliance to the conditions of Proposition 1A.

The legal interpretation of Proposition 1A is of great legislative and public interest. I am mindful of the need for your office to provide a careful, reasoned analysis. Thank you for your assistance in this important matter.

Very truly yours,

Roelof van Ark

Chief Executive Officer
California High-Speed Rail Authority
rvanark@hsr.ca.gov
(916) 384-1488, direct

Statement on California High-Speed Rail by:
Congresswoman Anna G. Eshoo
Senator S. Joseph Simitian
Assemblyman Richard S. Gordon

April 18, 2011

Since the passage of Proposition 1A in 2008, each of us has expressed our support for "high-speed rail done right," by which we mean a genuinely statewide system that makes prudent use of limited public funds and which is responsive to legitimate concerns about the impact of high-speed rail on our cities, towns, neighborhoods and homes.

To date, however, the California High Speed Rail Authority has failed to develop and describe such a system for the Peninsula and South Bay. For that reason, we have taken it upon ourselves today to set forth some basic parameters for what "high-speed rail done right" looks like in our region.

We start with the premise that for the Authority to succeed in its statewide mission it must be sensitive and responsive to local concerns about local impacts. Moreover, it is undeniable that funding will be severely limited at both the state and national levels for the foreseeable future.

Much of the projected cost for the San Jose to San Francisco leg of the project is driven by the fact that the Authority has, to date, proposed what is essentially a second rail system for the Peninsula and South Bay, unnecessarily duplicating existing usable infrastructure. Even if such a duplicative system could be constructed without adverse impact along the CalTrain corridor, and we do not believe it can, the cost of such duplication simply cannot be justified.

If we can barely find the funds to do high speed rail right, we most certainly cannot find the funds to do high speed rail wrong.

Accordingly, we call upon the High-Speed Rail Authority and our local CalTrain Joint Powers Board to develop plans for a blended system that integrates high-speed rail with a 21st Century CalTrain.

To that end:

- We explicitly reject the notion of high-speed rail running from San Jose to San Francisco on an elevated structure or "viaduct"; and we call on the High-Speed Rail Authority to eliminate further consideration of an aerial option;

- We fully expect that high-speed rail running from San Jose to San Francisco can and should remain within the existing CalTrain right of way; and,

- Third and finally, consistent with a project of this more limited scope, the Authority should abandon its preparation of an EIR (Environmental Impact Report) for a phased project of larger

dimensions over a 25 year timeframe. Continuing to plan for a project of this scope in the face of limited funding and growing community resistance is a fool's errand; and is particularly ill-advised when predicated on ridership projections that are less than credible.

Within the existing right-of-way, at or below grade, a single blended system could allow high-speed rail arriving in San Jose to continue north in a seamless fashion as part of a 21st Century CalTrain (using some combination of electrification, positive train control, new rolling stock and/or other appropriate upgrades) while maintaining the currently projected speeds and travel time for high-speed rail.

The net result of such a system would be a substantially upgraded commuter service for Peninsula and South Bay residents capable of accommodating high-speed rail from San Jose to San Francisco.

All of this is possible, but only if the High-Speed Rail Authority takes this opportunity to rethink its direction.

Over the course of the past 18 months the Authority has come under considerable criticism from the California Legislative Analyst's Office, the Bureau of State Audits, the California Office of the Inspector General, the Authority's own Peer Review Group and the Institute of Transportation Studies at the University of California at Berkeley. The Authority would do well to take these critiques to heart, and to make them the basis for a renewed and improved effort.

Frankly, a great many of our constituents are convinced that the High-Speed Rail Authority has already wandered so far afield that it is too late for a successful course correction. We hope the Authority can prove otherwise.

An essential first step is a rethinking of the Authority's plans for the Peninsula and South Bay. A commitment to a project which eschews an aerial viaduct, stays within the existing right-of-way, sets aside any notion of a phased project expansion at a later date, and incorporates the necessary upgrades for CalTrain - which would produce a truly blended system along the CalTrain corridor - is the essential next step.

Attachment (8)

September 9th, 2011 Authority letter to AG Winn

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

September 9, 2011

Ms. Amy Winn,
Deputy Attorney General
AG's Office

Dear Ms. Winn,

This correspondence supplements my letter to you of May 5, 2011, which was prompted by Senator Simitian in his capacity as Chairman of the State Senate Budget Subcommittee No. 2.

That letter requested a legal analysis from your office regarding whether the "blended system" for the San Jose to San Francisco high-speed segment proposed by Congresswoman Eshoo, State Senator Simitian, and State Assembly Member Gordon meets the requirements specified in section 2704.09 of the California Streets and Highways code. The blended system offers many advantages. It would, however, be prudent to consider its legal viability under Proposition 1A and the environmental laws before proceeding apace. An outline of the proposed blended system concept is set out below.

Since my May 5 letter, several developments have occurred. They are significant and are the subjects of this letter to assist with the legal analysis requested.

First, Congresswoman Eshoo, Senator Simitian and Assembly Member Gordon have added qualifiers to the original blended system definition outlined in their press release (attachment to the May 5th letter) as follows:

- That aerial design options are not outright rejected but acceptable with local support;

- That high speed rail should remain substantially, but not necessarily completely, within the existing Caltrain right of way; and

- That the right of way constraint is relevant to Santa Clara and San Mateo counties, not San Francisco.

Second, the Peninsula Corridor Joint Powers Board (JPB), the owner of the peninsula rail corridor and administrator of the Caltrain commuter rail system, has commissioned an independent capacity analysis for the Caltrain corridor to determine the level of combined high-speed and Caltrain commuter rail service that can be accommodated respecting the parameters articulated in the proposal by the aforementioned group of Peninsula legislators.

The study, using a simulation model, is an initial screen to determine whether the blended system concept has merit from an operational perspective. A virtual blended system was created that focused on the existing Caltrain system from Diridon Station in San Jose to the existing 4th and King Station (the future Transbay Terminal satellite platforms for overflow) in San Francisco.

Additional infrastructure was added to the model to depict a new elevated structure from Diridon to Lawrence and an eight mile four track section from Redwood City to Hayward Park in the mid-peninsula. Additionally, Millbrae Station and 4th and King Street stations were completely re-modified, in line with future high-speed rail (HSR) needs. It should be noted that further deliberations with local stakeholders are needed for ultimate decisions about the location and design of additional tracks.

The actual operation of a blended system would include HSR service to the Transbay Terminal as required by state law, although the timing of this construction may be after HSR operation begins on the Peninsula.

Assuming an electrified rail system for both HSR and Caltrain trains with an upgraded smart signaling system that includes federally mandated positive train control functionality and provides enhanced operational efficiencies for both systems, the model shows the following:

- Initial modeling indicates that the blended system would be able to support Caltrain and HSR trains. Further work will be done to define schedules and stopping patterns for both systems.

- HSR trains capable of operating at speeds over 200 mph in other parts of the statewide system have been simulated at speeds up to 110 mph in the San Jose to San Francisco corridor.

- The model supports non-stop travel speeds (up to 110mph) for HSR trains from the Diridon Station to the 4th and King Station resulting in a 32 minute travel time. Further work can be done to validate how additional design upgrades can decrease the non-stop travel time to 30 minutes.

- The upgraded signaling system allows for headways of less than 5 minutes.

- The model segment between Diridon Station and 4th and King Station allows high-speed trains to pass through high-speed rail intermediate stations at the appropriate mainline operating speeds and high-speed rail passengers to travel from any high-speed rail station on the corridor to any other high-speed rail station without changing trains.

The results of the modeling effort are preliminary and additional due diligence is being conducted by the JPB and California High-Speed Rail Authority (CHSRA) at this time. Please know that the blended system concept is being seen as a prudent way to proceed. Prominent organizations such as the Bay Area Council and the Metropolitan Transportation Commission, along with an increasing number of local cities and locally elected officials, have endorsed the concept.

With the foregoing by way of further background, I now repost my request for your legal guidance as follows: Assuming the blended system project is designed to achieve the operating characteristics capable of implementation in the existing Caltrain corridor as described above, and assuming the system could meet the 30 minute travel time requirement under subsection (b)(3) of Streets and Highways Code Section 2704.09, would implementation of that system be found to comply with the criteria prescribed by Proposition 1A ?

On a separate matter from the requested legal guidance on the blended system concept for the San Jose to San Francisco segment, as noted in my May 5th letter addressed to you, it remains important to obtain your analysis or legal guidance related to the entire statewide system.

As posed by Senator Simitian, is there a time limit to achieving full compliance to the conditions of Proposition 1A in the construction of the statewide system?

Finally, and recognizing that you cannot give a definitive or precise answer to the question at this point in time, can you provide guidance on the likely length of time that would be required to complete environmental review under the California Environmental Quality Act for the proposed system which contemplates a significant increase in train traffic?

We seek your opinion at the earliest practicable date. Be assured that if further information is needed to enable you to render your opinion, both the CHSRA and JPB staff stand ready to be of assistance in that regard.

Sincerely,

Roelof van Ark

Chief Executive Officer
California High-Speed Rail Authority
rvanark@hsr.ca.gov
(916) 384-1488, direct

Statement on California High-Speed Rail by:
Congresswoman Anna G. Eshoo
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April 18, 2011

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